

Case study

Howden will support ArcelorMittal Group to significantly reduce their CO₂ emissions



While the steel industry is one of the biggest sources of carbon emissions, the world's leading integrated steel and mining company ArcelorMittal is actively engaged in delivering carbon-neutral steel.

The company has developed a global CO₂ technology strategy that will enable them delivering green steel in 2020, scaling up this offering in coming years, delivering its 30% CO₂ emission target by 2030, and achieve net zero by 2050.

One of the projects ArcelorMittal is implementing is the Steelanol plant which will recycle carbon into sustainable, advanced bio-ethanol.

Steelanol transforms carbon-rich industrial waste gases into bio-ethanol for use in the transport sector by way of a novel gas-fermentation technology.

This technology provides the unique opportunity to recycle the carbon from industrial exhaust gases that would otherwise be emitted into the atmosphere.

The Steelanol plant, which will be operating at ArcelorMittal Ghent steel plant in Belgium, shall make use of a technology developed as a licensed process, whereby gases produced during the chemistry of steel production are fermented by microbes that secrete ethanol.



This plant will produce approximately 80 million litres of bioethanol annually, an equivalent for powering 100,000 cars on the road.



Sulzer Chemtec shall provide the distillation equipment, which is designed for minimizing energy consumption by using a closed loops technology to re-use key resources.

Sulzer Chemtec has appointed Howden for the supply of 4 pcs of ATEX certified ExVel® turbo fans including main drive motors, lubrication units, inlet boxes, acoustic blankets and surge monitoring system.

This equipment will be operating in deep vacuum, compressing a mixture of ethanol and water vapours. The fans will be arranged in 3-stages, with the first stage consisting of two fans running in parallel.

Howden has selected ExVel turbo fans type HAXrK some with size up to 2.4m diameter impellers using stainless steel construction (superduplex impellers and 316L housings).

The four fans total power is close to 2700 KW. ExVel® turbo fans are a unique fan technology combining exceptional flow and pressure development for challenging applications with competitive cost with an outstanding track record of long plant life and reliability.

They can be manufactured from a variety of alloys and are gas-tight thus offering complete isolation of the process gas and a robust ability to handle corrosive or hazardous gases. These factors make ExVel® the first choice across the mining and metals processing industries, oil and gas and petrochemical industries, chemicals manufacturing, food processing and many other activities where long-term, round-the-clock operation is essential and unscheduled stoppages have expensive consequences.



Howden began working with Sulzer and Arcelor in 2017 and was awarded in January 2019. The equipment was delivered in June 2020 and the commissioning is expected in Q2/2021.



About ArcelorMittal

ArcelorMittal is the world's leading steel and mining company, with a presence in 60 countries and primary steelmaking facilities in 18 countries.

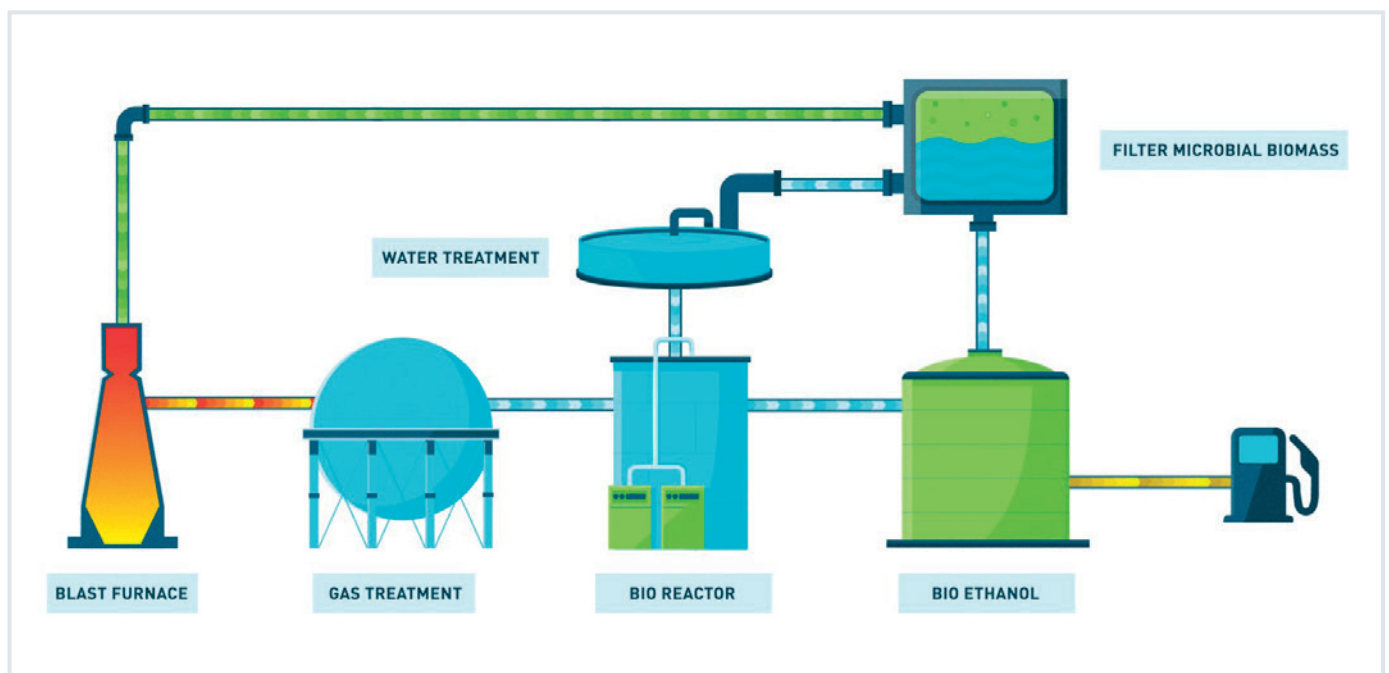
In 2019, ArcelorMittal had revenues of \$70.6 billion and crude steel production of 89.8 million metric tonnes, while iron ore production reached 57.1 million metric tonnes. Our goal is to help build a better world with smarter steels.

Steels made using innovative processes which use less energy, emit significantly less carbon and reduce costs. Steels that are cleaner, stronger and reusable.

Steels for electric vehicles and renewable energy infrastructure that will support societies as they transform through this century.

With steel at our core, our inventive people and an entrepreneurial culture at heart, we will support the world in making that change. This is what we believe it takes to be the steel company of the future. ArcelorMittal is listed on the stock exchanges of New York (MT), Amsterdam (MT), Paris (MT), Luxembourg (MT) and on the Spanish stock exchanges of Barcelona, Bilbao, Madrid and Valencia (MTS).

For more information about ArcelorMittal please visit:
<http://corporate.arcelormittal.com>



ArcelorMittal: Steelanol plant layout schematic.



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About Howden

Originally founded by James Howden in Scotland as a marine engineering firm in 1854, Howden has grown and evolved into a global leader in manufacturing air and gas handling solutions. With the power of our engineering expertise and technology, our equipment plays an integral role within our customers' processes, which provide safe and reliable solutions that are both sustainable and efficient.

Howden supports multiple sectors including infrastructure, power generation, oil & gas, wastewater, metals, mining and transportation.

We work in partnership with our customers, wherever they are, to deliver sustainable and customised solutions. For over a century we have built a strong global network of experts that is formed from responsive local service and delivery teams, in more than 100 countries, who are familiar with local requirements and challenges. We are proud that our people and business are part of the communities in which we operate in.

Our mantra is 'revolving around you', something that has underpinned our business since it was established. Constantly improving our products and services according to our customers' needs, Howden has never stood still.



OUR HOWDEN VALUES



We enable our customers' success

When our customers succeed, we succeed. We build partnerships with our customers so that we understand their goals and aspirations, and use our expertise to deliver solutions that add real value.



We recognise the value of our people

Our diverse, talented and inspired people make Howden. We each play our part, aligned to a common purpose, working together so that we learn, we grow and we make a difference.



We strive for excellence

With customers in mind, and as One Howden, we are committed to continuous improvement as a way of life. We challenge ourselves every day to be more efficient and more effective in everything we do.



We adapt and innovate

As markets evolve, so do we – it is part of our Howden heritage, and our future. We see change as an opportunity and use our passion for solving complex problems to create innovative solutions.



We do the right thing

Keeping each other safe is always our priority. We operate ethically, with honesty and transparency, and with respect for the communities where we live and work, to help build a more sustainable world.